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10/766,305	01/28/2004	Philip L. Bohannon	15-1-14-2	9365

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EXAMINER
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2164	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>*23 July 2007*</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-10 and 12-19* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-10 and 12-19* is/are rejected.

7)☒ Claim(s) *6 and 11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Remarks

1.   In response to communications filed on 23 July 2007, claims 1, 6-12, and 16 are

amended. Claims 1-19 are pending in the application.

Claim Objections

2.   Claims 1, 6, 7, 11, 12, and 16 objected to because of the following informalities:

Claim 1 contains the phrase "can be" in lines 1-2 and line 7. The phrase "can be"

indicates that the following result may not actually occur, or that there may be no result.

As such, it is indefinite.

Claim 6 contains the phrase "can be" in line 3, Claim 12 contains the phrase "can

be" in lines 1 and 9, and claim 16 contains the phrase "can be" in lines 2 and 8.

Claim 6 contains the limitation "its" in lines 8 and 11. This is indefinite, as the

pronoun "its" does not accurately convey which noun it is taking the place of.

Claim 7 contains the limitation "its" in line 4, claim 11 contains the limitation "its"

in line 8.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1, 4, 10, 12, 15-16, and 19 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Barsalou et al. ("Updating Relational Databases through Object-

Based Views") in view of Tatarinov et al. ("Updating XML").

As to claim 1, Barsalou et al. does not explicitly teach if an update to an XML

document can be reflected in an underlying relational database.

Tatarinov et al. teaches if an update to an XML document can be reflected in an

underlying relational database (see Section 6, page 418),

Barsalou et al. as modified teaches wherein said XML document is comprised of

a tree of nodes (see Barsalou et al. section 2, page 249 and Tatarinov et al. sections 3

and 3.1, page 414), said method comprising the steps of:

Assigning at least one of a plurality of categories to each of said nodes, wherein

said plurality of categories are based on a cardinality relationship indicated by one or

more correlation predicates and one or more foreign key constraints in said underlying

relational database (see Barsalou et al. page 255, column 2, "Validation Against the

Structural Model". Foreign key constraints are used. Also see page 249, "The Structural

Model", and page 253, column 1); and

Determining whether said update to said XML document can be reflected in said

underlying relational database based on said assigned category (see Barsalou et al.

page 253, section 5 "Updating through View Objects". Updates require local validation

against the view-object definition and global validation against the structural model).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to have modified Barsalou et al. by the teaching of

Tatarinov et al., since Tatarinov et al. teaches that "clearly, in order to fully evolve XML

into a universal data representation and sharing format, we must allow users to specify

updates to XML documents and must develop techniques to process them efficiently"

(see Abstract).

As to claim 4, Barsalou et al. as modified teaches further comprising the step of

determining an update execution strategy based on said assigning category (see

Barsalou et al. page 253, column 2, paragraph 1).

As to claim 10, Barsalou et al. teaches wherein said update is a deletion of a

referenced peninsula (RP) root-node that is permitted only when a foreign key of a

parent node does not appear in the view as a leaf node and wherein said update

execution strategy comprises the step of setting the foreign key values in an element

base view of its direct parent to NULL (see Barsalou et al. page 249, defition 2.3 and

page 253, section 5.1).

As to claim 12, Barsalou et al. does not teach a system for determining if an

update to an XML document can be reflected in an underlying relational database,

Tatarinov et al. teaches a system for determining if an update to an XML

document can be reflected in an underlying relational database (see Section 6, page

418),

Barsalou et al. as modified teaches wherein said XML document is comprised of

a tree of nodes (see Barsalou et al. section 2, page 249 and Tatarinov et al. sections 3

and 3.1, page 414), comprising:

A memory (see Tatarinov et al. page 421, section 7); and

At least one processor, coupled to the memory (see Tatarinov et al. page 421,

section 7), operative to:

Assign at least one of a plurality of categories to each of said nodes, wherein

said plurality of categories are based on a cardinality relationship indicated by one or

more correlation predicates and one or more foreign key constraints in said underlying

relational database (see Barsalou et al. page 255, column 2, "Validation Against the

Structural Model". Foreign key constraints are used. Also see page 249, "The Structural

Model", and page 253, column 1); and

Determine whether said update to said XML document can be reflected in said

underlying relational database based on said assigned category (see Barsalou et al.

page 253, section 5 "Updating through View Objects").

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to have modified Barsalou et al. by the teaching of

Tatarinov et al., since Tatarinov et al. teaches that "clearly, in order to fully evolve XML

into a universal data representation and sharing format, we must allow users to specify

updates to XML documents and must develop techniques to process them efficiently" (see Abstract).

As to claim 15, <u>Barsalou et al</u>. teaches wherein said processor is further configured to determine an update execution strategy based on said assigning category (see <u>Barsalou et al</u>. page 253, column 2, paragraph 1).

As to claim 16, <u>Barsalou et al</u> does not teach an article of manufacture for determining if an update to an XML document can be reflected in an underlying relational database,

<u>Tatarinov et al</u>. teaches an article of manufacture for determining if an update to an XML document can be reflected in an underlying relational database (see Section 6, page 418),

<u>Barsalou et al</u>. as modified teaches wherein said XML document is comprised of a tree of nodes (see <u>Barsalou et al</u>. section 2, page 249 and <u>Tatarinov et al</u>. sections 3 and 3.1, page 414), comprising a machine readable medium containing one or more programs which when executed implement the steps of:

Assigning at least one of a plurality of categories to each of said nodes, wherein said plurality of categories are based on a cardinality relationship indicated by one or more correlation predicates and one or more foreign key constraints in said underlying relational database (see <u>Barsalou et al</u>. page 255, column 2, "Validation Against the

Structural Model". Foreign key constraints are used. Also see page 249, "The Structural

Model", and page 253, column 1); and

Determining whether said update to said XML document can be reflected in said

underlying relational database based on said assigned category (see Barsalou et al.

page 253, section 5 "Updating through View Objects").

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to have modified Barsalou et al. by the teaching of

Tatarinov et al., since Tatarinov et al. teaches that "clearly, in order to fully evolve XML

into a universal data representation and sharing format, we must allow users to specify

updates to XML documents and must develop techniques to process them efficiently"

(see Abstract).

As to claim 19, Barsalou et al. teaches wherein said processor is further

configured to determine an update execution strategy based on said assigning category

(see Barsalou et al. page 253, column 2, paragraph 1).

5.   Claims 2-3, 5, 7-9, 13-14, and 17-18 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Barsalou et al. ("Updating Relational Databases through

Object-Based Views") in view of Tatarinov et al. ("Updating XML"), and further in view of

Wiederhold et al. "A structural model for Database Systems".

As to claims 2, 13, and 17, <u>Barsalou et al</u>. teaches wherein the plurality of categories includes overlap island (see page 253, definition 5.1)

<u>Barsalou et al</u>. does not explicitly teach wherein the plurality of categories includes dependency continent,

<u>Wiederhold et al</u>. teaches wherein the plurality of categories includes dependency continent (see page 9, section 3.3.1),

<u>Barsalou et al</u>. teaches and referenced peninsula categories (see page 253, definition 5.2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified <u>Barsalou et al</u>. by the teaching of <u>Wiederhold et al</u>., since <u>Wiederhold et al</u>. teaches a variety of relationships among relational objects that was well known in the art, and <u>Barsalou et al</u>. teaches testing update validity based on relationships among relational objects. It would have been obvious to one of ordinary skill in the art to have included further known classes of relationships to test for in <u>Barsalou et al</u>. In addition to this, <u>Wiederhold et al</u>. teaches that "Relational concepts are well known, but for conciseness we now define relations ad relation schemes as we use them in the structural model" (see section 3.2, page 6).

As to claim 3, 14, and 18, <u>Barsalou et al</u>. teaches the claim upon which this claim is dependent.

<u>Barsalou et al</u>. does not teach wherein said plurality of categories includes transitive archipelago and pseudo transitive archipelago categories.

Wiederhold et al. teaches wherein said plurality of categories includes transitive archipelago (see section 3.3.3, pages 10-11) and pseudo transitive archipelago (section 3.3.5, page 12) categories.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Barsalou et al. by the teaching of Wiederhold et al., since Wiederhold et al. teaches a variety of relationships among relational objects that was well known in the art, and Barsalou et al. teaches testing update validity based on relationships among relational objects. It would have been obvious to one of ordinary skill in the art to have included further known classes of relationships to test for in Barsalou et al. In addition to this, Wiederhold et al. teaches that "Relational concepts are well known, but for conciseness we now define relations ad relation schemes as we use them in the structural model" (see section 3.2, page 6).

As to claim 5, Barasalou et al. as modified teaches the method of claim 4.

Barsalou et al. does not explicitly teach wherein said update is a deletion of a branch dependency continent (DC) node and

Wiederhold et al. teaches wherein said update is a deletion of a branch dependency continent (DC) node (see page 10, 1st paragraph) and

Barsalou et al. as modified teaches:

wherein said update execution strategy comprises the steps of:

Deleting the corresponding tuple in an element base view (see Tatarinov et al.

page 419, 6.1.2 and Wiederhold et al. page 10); and

Propagating the deletion recursively to all branch dependency continent-children

of the deleted branch DC node (see Tatarinov et al. page 419, 6.1.2; and Wiederhold et

al. page 10).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to have modified Barsalou et al. by the teaching of

Wiederhold et al., since Wiederhold et al. teaches a variety of relationships among

relational objects that was well known in the art, and Barsalou et al. teaches testing

update validity based on relationships among relational objects. It would have been

obvious to one of ordinary skill in the art to have included further known classes of

relationships to test for in Barsalou et al. In addition to this, Wiederhold et al. teaches

that "Relational concepts are well known, but for conciseness we now define relations

ad relation schemes as we use them in the structural model" (see section 3.2, page 6).

As to claim 7, Barsalou et al. teaches the method of claim 4.

Barsalou et al. does not teach wherein said update is a movement of a branch

dependency continent node

Wiederhold et al. teaches wherein said update is a movement of a branch

dependency continent node (see page 10, 1st paragraph)

Barsalou et al. as modified teaches that is permitted only when a foreign key in the node to be moved does not itself appear in a view as a leaf node and wherein said update execution strategy comprises the step of setting foreign-key values in an element base view of the DC-node to the key values of its new direct parent (see Wiederhold et al. page 17, #1(c) and Barsalou et al. page 249, Definition 2.2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Barsalou et al. by the teaching of Wiederhold et al., since Wiederhold et al. teaches a variety of relationships among relational objects that was well known in the art, and Barsalou et al. teaches testing update validity based on relationships among relational objects. It would have been obvious to one of ordinary skill in the art to have included further known classes of relationships to test for in Barsalou et al. In addition to this, Wiederhold et al. teaches that "Relational concepts are well known, but for conciseness we now define relations ad relation schemes as we use them in the structural model" (see section 3.2, page 6).

As to claim 8, Barsalou et al. teaches the method of claim 4.

Barsalou et al. does not teach wherein said update is a deletion of a leaf DC-node

Wiederhold et al. teaches wherein said update is a deletion of a leaf DC-node (see Wiederhold pages 16-17, section 3.5.1)

Barsalou et al. teaches that is permitted only when the node does not correspond

to a foreign key appearing in correlation predicates and wherein said update execution

strategy comprises the step of setting a corresponding attribute in an element base view

to NULL (see Wiederhold pages 16-17, section 3.5.1 and see Barsalou et al. page 249,

definition 2.3).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to have modified Barsalou et al. by the teaching of

Wiederhold et al., since Wiederhold et al. teaches a variety of relationships among

relational objects that was well known in the art, and Barsalou et al. teaches testing

update validity based on relationships among relational objects. It would have been

obvious to one of ordinary skill in the art to have included further known classes of

relationships to test for in Barsalou et al. In addition to this, Wiederhold et al. teaches

that "Relational concepts are well known, but for conciseness we now define relations

ad relation schemes as we use them in the structural model" (see section 3.2, page 6).

As to claim 9, Barsalou et al. teaches the method of claim 4.

Barsalou et al. does not teach wherein said update is an insertion of a leaf DC-

node

Wiederhold et al. teaches wherein said update is an insertion of a leaf DC-node

Barsalou et al. as modified teaches that is permitted only when the leaf DC-node

does not correspond to a foreign key appearing in correlation predicates and wherein

said update execution strategy comprises the step of assigning a value to the

corresponding attribute in an element base view (see Wiederhold et al. page 17, #1(c)

and Barsalou et al. page 249, Definition 2.2)

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to have modified Barsalou et al. by the teaching of

Wiederhold et al., since Wiederhold et al. teaches a variety of relationships among

relational objects that was well known in the art, and Barsalou et al. teaches testing

update validity based on relationships among relational objects. It would have been

obvious to one of ordinary skill in the art to have included further known classes of

relationships to test for in Barsalou et al. In addition to this, Wiederhold et al. teaches

that "Relational concepts are well known, but for conciseness we now define relations

ad relation schemes as we use them in the structural model" (see section 3.2, page 6).

Allowable Subject Matter

6.   Claims 6 and 11 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of

the base claim and any intervening claims.

Response to Arguments

7.   Applicant's arguments filed 23 July 2007 have been fully considered but they are

not persuasive.

In regards to Applicant's Rule 131 Declaration filed on 26 December 2006:

a.   Applicant is attempting to show conception of invention prior to September 2003, the effective date of <u>Wang et al</u>., coupled with diligence from just prior to the reference date until 28 January 2004.

b. The critical period for which diligence must be shown is from just before September 2003, the effective date of <u>Wang et al</u>., until 28 January 2004, the effective filing date of the instant application. It appears that the evidence submitted is insufficient to establish diligence from a date prior to the date of reduction to practice of the reference to a constructive reduction to practice of the instant invention. The entire period during which diligence is required must be accounted for by either affirmative acts or acceptable excuses. [see MPEP 2138.06].

As this is the case, the affidavit submitted 26 December 2006, is still insufficient to establish priority.

Conclusion

8.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Adams whose telephone number is (571) 272-3938. The examiner can normally be reached on 8:30 AM - 5:00 PM, M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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